



Atty. Dkt. No. 079328-0105

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: A. Robin POOLE
Title: PRODUCTS FOR REGULATING THE DEGRADATION OF
COLLAGEN AND METHODS FOR IDENTIFYING SAME
Appl. No.: 10/674,065
Filing Date: 09/30/2003
Examiner: Hope A. Robinson
Art Unit: 1652

AMENDMENT AND REPLY UNDER 37 CFR 1.114

Mail Stop RCE
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

This communication is responsive to an Advisory Action dated April 24, 2007 and a Final Office Action dated October 11, 2006, concerning the above-referenced patent application, and is accompanied by a Request for Continued Examination.

A Petition for Extension of Time to make this response timely is included in the Request for Continued Examination filed together herewith.

Amendments to the Claims are reflected in the listing of claims which begins on page'2 of this document.

Remarks begin on page 8 of this document.

Please amend the application as follows.

07/12/2007 DEMMANU1 00000014 10674065

02 FC:2251

60.00 OP

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An isolated or purified peptide consisting of the an amino acid sequence ~~selected from the group consisting of:~~

(a) ~~GPRGPPGPPGKPGDDGEAGKPGKSGERGPPGPQGARGFPGTPGLPGVK
GHRGYPLDGAKEAGAPGVKGESGSPGQNGSPGGPM (CB12) (SEQ ID NO: 11);~~

(b) ~~GPRGPPGPPGKPGDDGEAGKPGKSGERGPPG (CB12-I) (SEQ ID NO: 2);~~

(c) ~~ERGPPGPQGARGFPGTPGLPGVK (CB12-II) (SEQ ID NO: 3);~~

(d) ~~GLPGVKGHRGYPLDGAKEAGAPG (CB12-III) (SEQ ID NO: 4);~~

(e) ~~GEAGAPGVKGESGSPGQNGSPGPM (CB12-IV) (SEQ ID NO: 5);~~

(f) ~~GERGPPGPQGARGFP*GTP*GLP*GVK (SEQ ID NO: 6) wherein the * denotes
sites of hydroxylation. (Pro6);~~

(g) ~~GERGPP*GPQGARGFPGTP*GLP*GVK (SEQ ID NO: 7) wherein the * denotes
sites of hydroxylation. (Pro15);~~

(h) ~~GERGPP*GPQGARGFP*GTPGLP*GVK (SEQ ID NO: 8) wherein the * denotes
sites of hydroxylation. (Pro18); and~~

(i) ~~GERGPP*GPQGARGFP*GTP*GLPGVK (SEQ ID NO: 9) wherein the * denotes
sites of hydroxylation. (Pro21);~~

wherein said peptide is effective in decreasing the rate of degradation of type II collagen or the rate of chondrocyte hypertrophy.

2. (Previously Presented) The isolated or purified peptide of claim 1, wherein said peptide is further modified by hydroxylation.

3. (Previously Presented) The isolated or purified peptide of claim 2, wherein said peptide is hydroxylated at one or more of the proline or lysine residues of said peptide.

4. (Previously Presented) The isolated or purified peptide of claim 3, wherein said peptide is hydroxylated at one or more proline residues located within the sequence Gly-X-Pro, where X indicates any amino acid.

5. (Previously Presented) The isolated or purified peptide of claim 3, wherein said peptide is hydroxylated at one or more lysine residues located within the sequence Gly-X-Lys, where X indicates any amino acid.

6. (Withdrawn) A peptide consisting essentially of an amino acid sequence denoted CB12:
GPRGPPGPPGKPGDDGEAGKPGKSGERGPPGPQGARGFPGTPGLPGVKGHRGYPLD
GAKGEAGAPGVKGESGSPGQNGSPGGPM (SEQ ID NO: 11).

7. (Withdrawn) The peptide of claim 6, wherein said peptide is further modified by hydroxylation.

8. (Withdrawn) The peptide of claim 7, wherein said peptide is hydroxylated at one or more of the proline or lysine residues of the peptide.

9. (Withdrawn) The peptide of claim 8, wherein said peptide is hydroxylated at one or more proline residues located within the sequence Gly-X-Pro, where X indicates any amino acid.

10. (Withdrawn) The peptide of claim 8, wherein said peptide is hydroxylated at one or more lysine residues located within the sequence Gly-X-Lys, where X indicates any amino acid.

11. (Withdrawn) The peptide of claim 7, wherein said peptide consists essentially of
GPRGPP*GPP*GKP*GDDGEAGKP*GKSGERGPP*GPQGARGFP*GTP*GLP*GVKGH
RGYPGLDGAKEAGAP*GVKGESGSP*GQNGSP*GGPM (SEQ ID NO: 12) and
wherein the * denotes sites of hydroxylation.

12 - 15 (Canceled)

16. (Withdrawn) A peptide consisting essentially of an amino acid sequence denoted CB12-II: GERGPPGPQGARGFPGLPGVK (SEQ ID NO: 13).

17. (Withdrawn) The peptide of claim 16, wherein said peptide is further modified by hydroxylation.

18. (Withdrawn) The peptide of claim 17, wherein said peptide is hydroxylated at one or more of the proline or lysine residues of the peptide.

19. (Withdrawn) The peptide of claim 18, wherein said peptide is hydroxylated at one or more proline residues located within the sequence Gly-X-Pro, where X indicates any amino acid.

20. (Withdrawn) The peptide of claim 18, wherein said peptide is hydroxylated at one or more lysine residues located within the sequence Gly-X-Lys, where X indicates any amino acid.

21. (Withdrawn) The peptide of claim 17, wherein said peptide consists essentially of GERGPP*GPQGARGFP*GTP*GLP*GVK (SEQ ID NO: 14).

22 - 25 (Canceled)

26. (Withdrawn) The peptide of claim 16, wherein said peptide consists essentially of GERGPPGPQGARGFP*GTP*GLP*GVK (Pro6) (SEQ ID NO: 6) and wherein the * denotes sites of hydroxylation.

27 - 28 (Canceled)

29. (Withdrawn) The peptide of claim 16, wherein said peptide consists essentially of GERGPP*GPQGARGFPGLPGTP*GLP*GVK (Pro15) (SEQ ID NO: 7) and wherein the * denotes sites of hydroxylation.

30 - 31 (Canceled)

32. (Withdrawn) The peptide of claim 16, wherein said peptide consists essentially of GERGPP*GPQGARGFP*GTPGLP*GVK (Pro18) (SEQ ID NO: 8) and wherein the * denotes sites of hydroxylation.

33 - 34 (Canceled)

35. (Withdrawn) The peptide of claim 16, wherein said peptide consists essentially of GERGPP*GPQGARGFP*GTP*GLPGVK (Pro21) (SEQ ID NO: 9) and wherein the * denotes sites of hydroxylation.

36 - 37 (Canceled)

38. (Withdrawn) A peptide consisting essentially of an amino acid sequence denoted as CB12-I: GPRGPPGPPGKPGDDGEAGKPGKSGERGPPG (SEQ ID NO: 2).

39. (Withdrawn) The peptide of claim 38, wherein said peptide is further modified by hydroxylation.

40. (Withdrawn) The peptide of claim 39, wherein said peptide is hydroxylated at one or more of the proline or lysine residues of the peptide.

41. (Withdrawn) The peptide of claim 40, wherein said peptide is hydroxylated at one or more proline residues located within the sequence Gly-X-Pro, where X indicates any amino acid.

42. (Withdrawn) The peptide of claim 40, wherein said peptide is hydroxylated at one or more lysine residues located within the sequence Gly-X-Lys, where X indicates any amino acid.

43. (Withdrawn) The peptide of claim 38, wherein said peptide consists essentially of GPRGPP*GPP*GKP*GDDGEAGKP*GKSGERGPP*G (SEQ ID NO: 15) and wherein the * denotes sites of hydroxylation.

44 - 47 (Canceled)

48. (Withdrawn) A peptide wherein said peptide consists essentially of an amino acid sequence denoted as CB12-III: GLPGVKGHRGYPGLDGAKGEAGAPG (SEQ ID NO: 4).

49. (Withdrawn) The peptide of claim 48, wherein said peptide is further modified by hydroxylation.

50. (Withdrawn) The peptide of claim 49, wherein said peptide is hydroxylated at one or more of the proline or lysine residues of the peptide.

51. (Withdrawn) The peptide of claim 50, wherein said peptide is hydroxylated at one or more proline residues located within the sequence Gly-X-Pro, where X indicates any amino acid.

52. (Withdrawn) The peptide of claim 50, wherein said peptide is hydroxylated at one or more lysine residues located within the sequence Gly-X-Lys, where X indicates any amino acid.

53. (Withdrawn) The peptide of claim 48, wherein said peptide consists essentially of GLP*GVKGHRGYP*GLDGAKGEAGAP*G (SEQ ID NO: 16) and wherein the * denotes sites of hydroxylation.

54 – 57 (Canceled)

58. (Withdrawn) A peptide consisting essentially of an amino acid sequence denoted as CB12-IV: GEAGAPGVKGESGSPGQNGSPGPM (SEQ ID NO: 5).

59. (Withdrawn) The peptide of claim 58, wherein said peptide is further modified by hydroxylation.

60. (Withdrawn) The peptide of claim 59, wherein said peptide is hydroxylated at one or more of the proline or lysine residues of the peptide.

61. (Withdrawn) The peptide of claim 60, wherein said peptide is hydroxylated at one or more proline residues located within the sequence Gly-X-Pro, where X indicates any amino acid.

62. (Withdrawn) The peptide of claim 60, wherein said peptide is hydroxylated at one or more lysine residues located within the sequence Gly-X-Lys, where X indicates any amino acid.

63. (Withdrawn) The peptide of claim 58, wherein said peptide consists essentially of GEAGAP*GVKGESGSP*GQNGSP*GPM (SEQ ID NO: 17) and wherein the * denotes sites of hydroxylation.

64 - 67 (Canceled)

68. (Previously Presented) The peptide of claim 1, wherein 1-5 amino acids of the peptide sequence have been replaced using conservative substitutions and wherein said peptide is effective in decreasing the rate of degradation of type II collagen or the rate of chondrocyte hypertrophy.

69-93. (Canceled)

94. (Withdrawn) A method of regulating collagen turnover comprising:

administering to a subject a pharmaceutically effective amount of a composition comprising a peptide of claim 1.

95. (Withdrawn) A method of inhibiting chondrocyte hypertrophy in a subject comprising:

administering to said subject a pharmaceutically effective amount of a peptide of claim 1, whereby said hypertrophy is inhibited.